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December 20, 1994

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

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William Caton, Acting Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554
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DOCKET FILE COPY ORIGINAL

Re: Ex Parte Contact in GN Docket No. 90-314 GN Docket
No. 93-252, GN Docket No. 94-54, CC Docket No. 94-
102, PR Docket No. 93-144

Dear Mr. Caton:

On December 13, 1994, Mark Golden, Mary Madigan, and Amy Stephan from the Personal Communications Industry Association and counsel met with Keith Townsend from Commissioner Barrett's Office to discuss issues raised in the attached paper. Since these issues relate to matters in the above-referenced docket proceedings, a copy of the materials has been provided to your office for filing as an ex parte.

Pursuant to the instructions of the Secretary's office, an original and 15 copies of the notification have been submitted. If you have any questions concerning this transmittal, please contact the undersigned at (202) 828-3182.

Respectfully submitted,



Eric W. DeSilva

Encl.

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Personal
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DEC 20 1994

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

December 13, 1994

Mr. Keith Townsend
Senior Legal Advisor
Office of Commissioner Barrett
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

Dear Mr. Townsend:

Attached, as you requested, is a briefing package on PCIA's issues. This package includes a history of the issues and positions we have adopted over the past few years as well as a more detailed overview of some of the key issues PCIA is currently addressing. Also included are some of PCIA's industry reports. This package is intended to provide a basis for tomorrow's discussion at which time we would be happy to provide more details on the issues of most interest to you.

We look forward to meeting with you tomorrow and appreciate this opportunity to present our issues to you.

Sincerely,

Mary E. Madigan
PCS Issues Manager

Attachment

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TAB A

OVERVIEW OF THE PERSONAL COMMUNICATIONS INDUSTRY ASSOCIATION

Established in 1949, PCIA has been instrumental in advancing regulatory policies, legislation, and technological standards that have helped launch the age of personal communications services. Through many vehicles - policy boards, market forecasts, publications, spectrum management programs, seminars, technician certification programs, and its industry trade show Personal Communications Showcase - PCIA is committed to maintaining its position as the association for the PCS industry.

PCIA's member companies include PCS licensees and those in the cellular, paging, ESMR, SMR, mobile data, cable, computer, manufacturing, and local and interexchange sectors of the industry, as well as technicians, wireless systems integrators, communication site owners, distributors and service professionals, and private systems users.

PCIA protects the interest of its members by facilitating the development of consensus positions out of its members' diverse opinions and viewpoints, and serves as the industry's advocate before Congress, the Federal Communications Commission and other federal and state agencies. PCIA is also the FCC-appointed frequency coordinator for the Business Radio Service, processing more than 50,000 applications annually.

TAB B

SUMMARY OF RECENT PCIA ACTIVITIES

The Personal Communications Industry Association's key activities during the past three years include an advocacy program for new PCS, in which we have been able to build consensus among a very diverse membership (cellular, paging, cable, RBOCS, interexchange carriers, manufacturers and new PCS companies). PCIA was one of the first to request that the FCC establish the PCS proceeding, and we have successfully built consensus on critical issues such as microwave relocation, advanced messaging services, PCS service descriptions, PCS network interfaces and architecture, PCS administration, billing and management, PCS data requirements, PCS spectrum requirements, PCS power limits, PCS quality levels, microwave interference calculations, consistent RF exposure regulations, and flexible cellular.

PCIA's PCS Market Demand Forecast helped to clarify an immense potential demand for additional two-way wireless services in cellular, new PCS, paging, ESMR, satellite and mobile data. We have engaged in timeline development to help members in establishing manufacturing and network rollout objectives. PCIA negotiated a copyright licensing agreement with Rand McNally Corporation for use of the MTA and BTA designations. PCIA has worked to build consensus on spectrum auctions procedures, and developed a consensus white paper on competitive bidding. Working directly with the FCC, we have organized auctions briefings for the industry, including setting up an "auction ready room" at our recent convention, the Personal Communications Showcase in Seattle.

PCIA has strongly supported the Commission's adoption of new regulations for CMRS providers. We encouraged the Commission to maintain a strong preemption policy disfavoring state regulation of CMRS, and asked the FCC to evaluate forbearance from additional Title II regulation of CMRS, noting a highly competitive marketplace and the existence of many choices among consumers. We advocate that equal access should not be extended to CMRS carriers, citing that "application of equal access requirements to CMRS would extend burdensome rules designed to limit monopoly power to a market with no monopoly players, and create unjustified costs, consumer inconvenience and inefficient networks."

PCIA proposed regulatory policies to foster the successful deployment of PCS, including recommendations on policies that would promote capital formation for new PCS applicants, expeditious bidding procedures, and transferability of licenses.

Our advocacy work has focused not only on responses to FCC notices; our member companies have invested thousands of man-months of work in preparing consensus positions to help guide the development of standards for PCS networks. At the request of the National Telecommunications and Information Administration (NTIA), we worked cooperatively to calculate spectrum requirements for the wireless community for the Year 2003. Together with the Association of Public Safety Communications Officials, Int'l. (APCO) and the National Association of State Nine-One-One Administrators (NASNA), we initiated a cooperative forum in which the public safety community and the wireless community could communicate their needs for the next generation of wireless networks, and build an industry based position on what emergency access features may be incorporated into the emerging networks, vis a vis the emergency service provider's ability to adapt their existing infrastructure to a future wireless standard. PCIA members believe that the creation of an FCC mandated standard for E-911 services are premature, unwarranted and may, in fact, be counterproductive.

The next section describes background and PCIA positions on currently active issues.

TAB C

ISSUES OVERVIEW

The FCC's interest in ensuring the success of the wireless industry has been evident in its efforts to create a balance between regulation and market forces. For the promise of all wireless services to be realized PCIA believes the following measures are necessary to facilitate rapid deployment of service, to increase flexibility of mobile service providers, and to develop the broadest and most diverse range of new service offerings.

I. DEPLOYMENT ISSUES

A. Interconnection

The rights, rates, and terms under which PCS will interconnect will determine whether new PCS services will succeed in a highly competitive market. PCIA endorses fair interconnection rights including mutual compensation between CMRS providers and the LECs. Furthermore, interconnection agreements between CMRS providers and the LECs should be offered pursuant to inter-carrier contracts, as opposed to tariffs, that could be filed with the Commission.

B. Microwave Relocation/Interference issues

In addition to the requirement to relocate the incumbent microwave users within the 1850-1990 MHz band, the PCS industry must address other microwave interference issues. Coordination with microwave users in Canada and Mexico and the potential for adjacent channel interference with Federal Government users below the 1850 MHz band are just some of the issues PCIA has addressed.

C. Numbering

PCIA has communicated its strong concerns regarding discriminatory treatment of the wireless industry to the FCC. PCIA has requested that the Commission issue a "letter ruling" stating that discriminatory treatment of particular industry sectors in Numbering Plan Areas relief planning is counter to FCC expectations and policy.

D. Site Acquisition and Zoning

It is, in general terms, our interest to expedite the acquisition of base station sites, recognizing the enormous impact this has on business and network quality levels. Our membership will work cooperatively to develop information packages for local zoning boards and local authority education, among other programs.

E. Wireless access to enhanced 911 emergency services

There is a strong concern among the public safety community and the FCC about the wireless industry's provision of access to enhanced 911 (E911) emergency services. The FCC initiated a proceeding addressing this issue which was based on a Joint Position Paper developed by PCIA and the public safety community. PCIA has been and will continue to be committed to finding a technically and economically feasible solution. We consider this issue to be extremely important and we have co-sponsored a Joint Expert's Meeting to address access to E911 services and find an overall wireless industry approach.

II. REGULATORY ISSUES

A. Equal access

PCIA has stated that before imposing additional equal access obligations on any class of broadband CMRS, the Commission should carefully consider whether the perceived customer benefits would outweigh the costs. Furthermore, equal access should not be imposed on paging or narrowband CMRS.

B. 931 Paging Application Process

FCC processing of 931 MHz paging license applications is at a virtual standstill due to a delay caused by a recent conversion to new software and an unanticipated and substantial increase in the number of new applications. PCIA has discussed this issue with FCC staff and has drafted a proposed solution which will be filed shortly with the FCC. At the request of the FCC, PCIA is also attempting to develop criteria for separating applications that are the easiest to process in the backlog.

C. Market Licensing for Paging

The paging industry believes that market areas licensing would be a reasonable mechanism to achieve the Commission's goals of increasing speed of licensing, reducing regulatory delay, and encouraging publicly beneficial wide-area service. Market area licensing has been deployed in the auctioning of the Narrowband PCS licenses and the FCC has indicated that it will address market area licensing of paging services in a separate proceeding.

III. GENERAL ADMINISTRATIVE ISSUES

A. Electronic Filing

PCIA supports development of an Advisory Council to develop a process for electronic filing of forms on site and licensee information. Our Task Force on Electronic Filing has set forth parameters for adoption and we encourage the Commission to go forward and address this issue to expedite PCS network deployment.

IV. OTHER ISSUES

In addition to the issues summarized above and in the issues papers provided in this package, the following is a list of current legislative and regulatory initiatives on which PCIA membership is currently developing positions:

- o Narrowband PCS standards
- o The reallocation of government spectrum to private use
- o Refarming of the private radio spectrum
- o The extension of conditional licensing to all Business Pool applications
- o The establishment of fair site fees for the use of federal lands

- o Joint licensing of RCC and PCP transmitters
- o Earned exclusivity for PCP licensees at 929 MHz
- o More effective channel sharing on UHF and VHF frequencies
- o 800 MHz wide area licensing
- o RF radiation standards
- o Temporary licensing for certified radio operators
- o Designated responsibility for the marking and lighting of communications towers

TAB D

ISSUE: INTERCONNECTION

BACKGROUND:

- o On July 1, 1994, the FCC released a combined Notice of Proposed Rulemaking (NPRM) and Notice of Inquiry (NOI) covering commercial mobile radio service (CMRS) equal access and interconnection issues (CC Docket No. 94-54). The NPRM considered whether to impose equal access obligations on CMRS providers. The NPRM also proposed rules to govern requirements for interconnection service provided by local exchange carriers (LECs) to CMRS providers. The NOI explored issues raised by requiring CMRS providers to interconnect with each other.
- o With respect to LEC/CMRS interconnection, the Commission invited comment on whether to require LECs to offer interconnection to CMRS providers under tariff, or whether to retain the existing requirement that LECs provide interconnection pursuant to good faith contractual negotiations. As an alternative, it raised the possibility of requiring private interconnection agreements to be filed with the Commission.
- o The NOI focused on three issues. First, it asked whether interconnection among CMRS providers should be mandated. Second, it inquired whether to require CMRS providers to offer interconnection to resellers of CMRS in order to provide for switch-based resale of CMRS. Third, it invited comment on whether to impose resale obligations on any class of CMRS provider other than cellular carriers.

RECENT DEVELOPMENTS:

- o Comments were filed on September 12, 1994 and replies were filed on October 13, 1994.

PICA endorsed the following courses of action:

- Interstate interconnection of LECs and CMRS providers should not be tariffed, but should continue to be offered pursuant to inter-carrier contracts that could be filed with the Commission, provided that information identifying the CMRS carrier is removed and no filing fee is imposed.
- The mutual compensation obligation should apply to LEC/CMRS interconnection without regard to the jurisdictional nature of the traffic.
- CMRS providers should be required to negotiate interconnection with other CMRS providers in good faith, but the Commission should not specify up front what forms of interconnection will be considered reasonable.
- If mutual compensation is offered by one CMRS provider to another CMRS provider, it should be available on the same terms to other similarly situated CMRS providers.
- CMRS providers should not be permitted to impose unreasonable restrictions on resale and should not be allowed to use resale to evade build-out requirements.

INTERCONNECTION (cont.)

- o PCIA is currently developing a Standards Requirements Document (SRD) on Interconnection and Interoperability for PCS. The SRD is a comprehensive overview of requirements needed for PCS networks to interconnect and interoperate and will include an assessment of where standards work is currently underway and identify areas where standards work needs to be initiated.

ISSUE: MICROWAVE RELOCATION

BACKGROUND:

- o The licensed PCS spectrum is currently occupied by roughly 4,000 microwave links. In order to deploy their services, PCS licensees must either protect these microwave links from interference or provide for their relocation to comparable alternative facilities. It is estimated that the costs of microwave relocation could exceed \$1 billion.
- o In deploying PCS, licensees must protect or relocate microwave links within their specific PCS frequency blocks (co-channel). In addition, licensees must protect or relocate microwave links in adjoining spectrum blocks (adjacent channels). The latter obligation arose because microwave systems have receivers that can pick up interference from transmissions occurring outside their specific channel of operation.
- o Microwave links consist of two "paired" channels, with each end of the link transmitting in a different frequency block. Each microwave channel generally occupies 10 MHz of bandwidth with 10 MHz spacing between channel centers. Due to the characteristics of radio signals, a licensee could interfere with not only co-channel, but also adjacent channel, microwave licensees in the PCS band.
- o There is an industry standard for calculating interference with microwave users. The most recent version is Bulletin 10F. Work on Bulletin 10G is already underway.

RECENT DEVELOPMENTS:

- o PCIA identified an adjacent channel interference problem that could occur between the PCS A band and incumbent government users in the adjacent band, in particular between 1830 and 1850 MHz. PCIA approached the National Telecommunications and Information Administration (which is responsible for the government's use of the radio spectrum) and requested information on frequency assignments within the spectrum band of concern. NTIA has released some information on usage within that band (there were frequency concerns about releasing detailed information on individual frequency assignments).

PCIA will continue to work with the NTIA after the auctions for the A and B bands are complete to determine if more detailed information can be made available.

PCIA will work with NTIA and Congress to develop legislation that will allow for the relocation of government microwave licensees by the private sector.

- o An additional interference problem for PCS licensees is along the Canadian and Mexican borders. The FCC has recently signed an interim sharing agreement with Canada regarding the use of the 1850 to 1990 MHz band for PCS along the US/Canadian border.

PCIA will continue to work with the FCC regarding coordination issues along the Canadian and Mexican borders.

ISSUE: NUMBERING

BACKGROUND:

- o Telephone numbers are a fundamental resource for the telecommunications industry and especially for the wireless industry. Telephone numbers are generally used in the provisioning of wireless services as a terminal identifier (for individual cellular, paging, and PCS subscriber units).
- o The North American Numbering Plan (NANP) is the numbering scheme under which World Zone 1 countries (United States, Canada, and the Caribbean nations) operate. The format of NANP numbers is, for example, 202-467-4770.

The first three digits are generally known within the industry as the Numbering Plan Area "NPA" or Service Access Code "SAC" if the code is for a non-geographic service such as 800, 900, or 500 PCS numbers (the public generally refers to both NPAs and SACs as area codes). The second three digits are known as the Central Office "CO" codes for NPAs and as the "NXX" codes for SACs. The final four digits are generally referred to as the line number.

- o The assignment of CO codes, which are the primary numbering resources for the telecommunications industry, are under the complete control of the dominant local exchange carrier in each region, which is always one of the RBOCs or GTE, in the role of Code Administrators. All requests for CO codes, including requests from the wireless industry and the LEC's various competitors, must be submitted to the LEC acting as Code Administrator.
- o The LECs as Code Administrators currently exercise total autonomy in development of NPA relief plans, which must generally be submitted to the state PUC for approval. NPA relief plans address how a new NPA/area code will be introduced when an existing NPA is close to "exhaust" (running out of numbers). The NPA relief plans determine what the geographic boundaries of the new and old NPA will be and the dialing pattern.

RECENT DEVELOPMENTS:

- o The LECs acting as Code Administrators are currently attempting to implement NPA relief plans that treat wireless carriers and their customers differently from the LECs and their customers. These attempts have included creation of NPA "overlays" which would force all wireless customers to give up numbers in the old NPA and move to the new overlay, and increasing the number of digits that must be dialed to and from a wireless terminal from seven to ten digits.

PCIA has communicated its strong concerns regarding discriminatory treatment of the wireless industry to the FCC. PCIA has requested that the Commission issue a "letter ruling" stating that discriminatory treatment of particular industry sectors in NPA relief planning is counter to FCC expectations and policy.

- o The FCC has initiated an NPRM on removing Code Administration and relief planning functions from the LECs and centralizing it the North American Numbering Plan Administration (NANPA). The NPRM also addresses removal of NANPA functions from Bellcore to an independent, competitively neutral, third party.

PCIA and the wireless industry are strongly in favor of these proposed actions and will continue to work with the FCC and industry to accomplish these objectives as quickly as possible.

ISSUE: WIRELESS ACCESS TO 911 EMERGENCY SERVICES

BACKGROUND:

- o PCIA, in cooperation with representatives of the public safety community drafted the "PCIA, APCO, NASNA Emergency Access Position Paper" which was filed with the FCC in July, 1994. This Joint Paper documented the first attempt of the PCS community to comprehensively address the needs of the public safety community. The FCC used the Joint Paper as a basis for its Notice of Proposed Rule Making addressing enhanced 911 emergency calling systems.
- o The wireless industry and the public safety community have participated in two Joint Experts Meetings (JEMs) regarding wireless access to 911 emergency services (Cellular JEM in August 1994 and the Wireless JEM in October 1994). The resultant meeting reports explore in greater technical detail the public safety requirements and possible means of meeting those requirements.

RECENT DEVELOPMENTS:

- o The FCC, on October 19, 1994, released a Notice of Proposed Rule Making regarding revision of the Commission's rules to ensure compatibility with enhanced 911 emergency services. The NPRM addresses PBX issues and the wireless service provider issues. The NPRM outlines proposed requirements on wireless services regarding:
 - 911 availability
 - Grade of service
 - 911 call priority
 - User location information
 - Re-ring/call back
 - Common channel signaling
 - Access to text telephone devices (TTY)
 - Equipment Manufacture, Importation and Labeling
 - Privacy
 - Compatibility with network services
 - Federal preemption

Comments are due January 9 and reply comments are due February 8, 1995.

PCIA is currently preparing comments on the NPRM.

ISSUE: EQUAL ACCESS

BACKGROUND:

- o On July 1, 1994, the FCC released a combined Notice of Proposed Rulemaking (NPRM) and Notice of Inquiry (NOI) covering commercial mobile radio service (CMRS) equal access and interconnection issues (CC Docket No. 94-54). The NPRM considered whether to impose equal access obligations on CMRS providers. The NPRM also proposed rules to govern requirements for interconnection service provided by local exchange carriers (LECs) to CMRS providers. The NOI explored issues raised by requiring CMRS providers to interconnect with each other.
- o The Commission tentatively concluded that, in concept, equal access obligations should be imposed on cellular licensees -- although three Commissioners released separate statements expressing some skepticism that such requirements were warranted. The Commission also requested comment on the costs and benefits of imposing equal access obligations on any other class of CMRS provider. It suggested that these obligations are in the public interest because equal access would increase competition and foster regulatory parity between wireline and wireless services. Nonetheless, the commission tentatively concluded that the full panoply of equal access requirements that apply to landline LECs should not apply to CMRS providers, and requested comment on whether equal access requirements should be tailored to meet the individual circumstances of particular commercial mobile radio services.

RECENT DEVELOPMENTS:

- o Comments were filed on September 12, 1994 and replies were filed on October 13, 1994.
 - PICA endorsed the following courses of action:
 - Broadband CMRS customer should have the ability to route calls to the IXC of their choice thorough a dial-around arrangement.
 - Before imposing additional equal access obligations on any class of broadband CMRS, the Commission should carefully consider whether the perceived customer benefits would outweigh the costs.
 - To avoid competitive distortions, whatever equal access obligations the FCC imposes on one category of broadband CMRS should apply to all other broadband CMRS offerings, with appropriate phase in rules that recognize the different capabilities of different offerings.
 - Equal access should not be imposed on paging or narrowband CMRS because paging has never been divided into intra and inter state components, and the costs for narrowband equal access would greatly outweigh the benefits.

ISSUE: 931 MHZ PAGING LICENSING

BACKGROUND:

- o In the Part 22 Rewrite Order, the FCC adopted rules for existing 931 MHz paging applications by which as many existing applications as possible would be processed by January 1, 1995. Remaining applicants would be required to file frequency-specific amendments within 60 days of the January 1 effective date of the new rules. Auctions will be used to resolve licensing for mutually-exclusive, frequency-specific applications.
- o FCC processing of 931 MHz paging license applications is at a virtual standstill. As of December 2, 1994, FCC staff indicated that they were currently processing applications filed in April 1994. By January 1, the Commission may still have a 6-8 month application backlog.
- o FCC staff has recognized the significant delays and attributes the situation to a six-week delay caused by a recent conversion to new software and an unanticipated, substantial increase in the number of new applications.

RECENT DEVELOPMENTS:

- o PCIA has discussed these issues with FCC staff and has drafted a proposed solution which will be filed shortly with the Commission.
- o Broadly summarized, the draft proposal would:
 - 1. Divide pending applications into two groups: those submitted before and after the November 17, 1994 publication of the Part 22 Rewrite Order in the Federal Register, thereby separating those applications which have been pending longest from the high volume of applications received after the Order's publication;
 - 2. Grant non-mutually exclusive applications filed before November 17, and use auctions to resolve licensing for groups of mutually-exclusive applications filed before November 17;
 - 3. Suggest the FCC issue a Public Notice specifying remaining channels available for future applications as well as for the applications pending that were filed after November 17 but before January 1, 1995. A 60-day window could be triggered for the filing of amendments to such applications.
- o Petitions for Reconsideration of the Part 22 Order are due December 17.
- o At the request of the FCC, PCIA is also attempting to develop criteria for separating applications that are the easiest to process in the backlog.
- o PCIA will continue to work closely with the Commission in resolving 931 MHz paging licensing issues.

ISSUE: MARKET AREA LICENSING

BACKGROUND:

- o In 1992, PCIA (then known as (Telocator")) proposed that the FCC adopt market area licensing for paging service, similar to that employed for cellular.
- o Currently, the FCC employs a per-transmitter, paging licensing process whereby a paging licensee must assemble a market on an arduous and inefficient, transmitter-by-transmitter basis.
- o The paging industry believes that market area licensing would be a reasonable mechanism to achieve the Commission's goals of increasing speed of licensing, reducing regulatory delay, and encouraging publicly beneficial wide-area service.
- o In addiiton, this approach will reduce the number of mutually exclusive applications for paging frequencies and yet respond to the legitimate needs of existing licenses.

RECENT DEVELOPMENTS:

- o Market area licensing has been employed in the auctioning of Narrowband licenses with great success.
- o The FCC has indicated that it will address market licensing of paging services in a separate proceeding.

ISSUE: ELECTRONIC FILING

BACKGROUND:

- o On March 7, 1994, the FCC announced, by Public Notice, that it was considering the establishment of a Federal Advisory Committee to assist the Common Carrier Bureau (CCB) in the development and implementation of an electronic filing system.
- o The proposed advisory committee would be convened to provide recommendations to the CCB to be used in the formulation of rules and procedures that would facilitate the electronic filing of applications, formal complaints, various reports, petitions and tariff filings.
- o The Commission requested comments by April 1, 1994.

RECENT DEVELOPMENTS:

- o In our comments, PCIA stated the following:

PCIA has long been an advocate of the adoption of electronic filing procedures both for existing forms of mobile services such as paging and cellular, and for emerging Personal Communications Services.

PCIA advocated the expedited development and implementation of electronic filing procedures because electronic filing would:

- considerably ease processing burdens for both industry and the Commission,
- facilitate the creation and maintenance of fully current and accurate Commission records,
- greatly enhance the accessibility of such records by the general public,
- and reduce costs.

TAB E

PCS SPECTRUM ALLOCATION AND SERVICE AREAS

A. BROADBAND PCS

The FCC has defined 2 GHz broadband personal communications services as a family of mobile or portable radio communications services that involve offerings to individuals and businesses and can be integrated with a variety of competing networks. This flexible definition is designed to include the widest possible range of wireless services and devices that will enable people to communicate anytime and virtually anywhere. For example, a new generation of such services may include small, lightweight, multi-function portable phones, portable facsimile, and other imaging devices, and new types of multi-channel cordless phones.

The FCC has allocated 120 MHz of spectrum for licensed broadband PCS in the 1850 to 1990 MHz band, divided into three 30 MHz blocks (Blocks A, B and C) and three 10 MHz blocks (blocks D, E, and F). The Commission has also established two different service areas for these blocks based on Rand McNally's Major Trading Areas (MTAs) and Basic Trading Areas (BTAs). There are 51 MTAs, each roughly the size of a state, and 493 BTAs, each approximately the size of several counties. The license in frequency blocks A and B will be awarded on an MTA basis, and the licenses on frequency blocks C, D, E, and F will be awarded on a BTA basis. A total of 2,074 broadband PCS license will be issued:

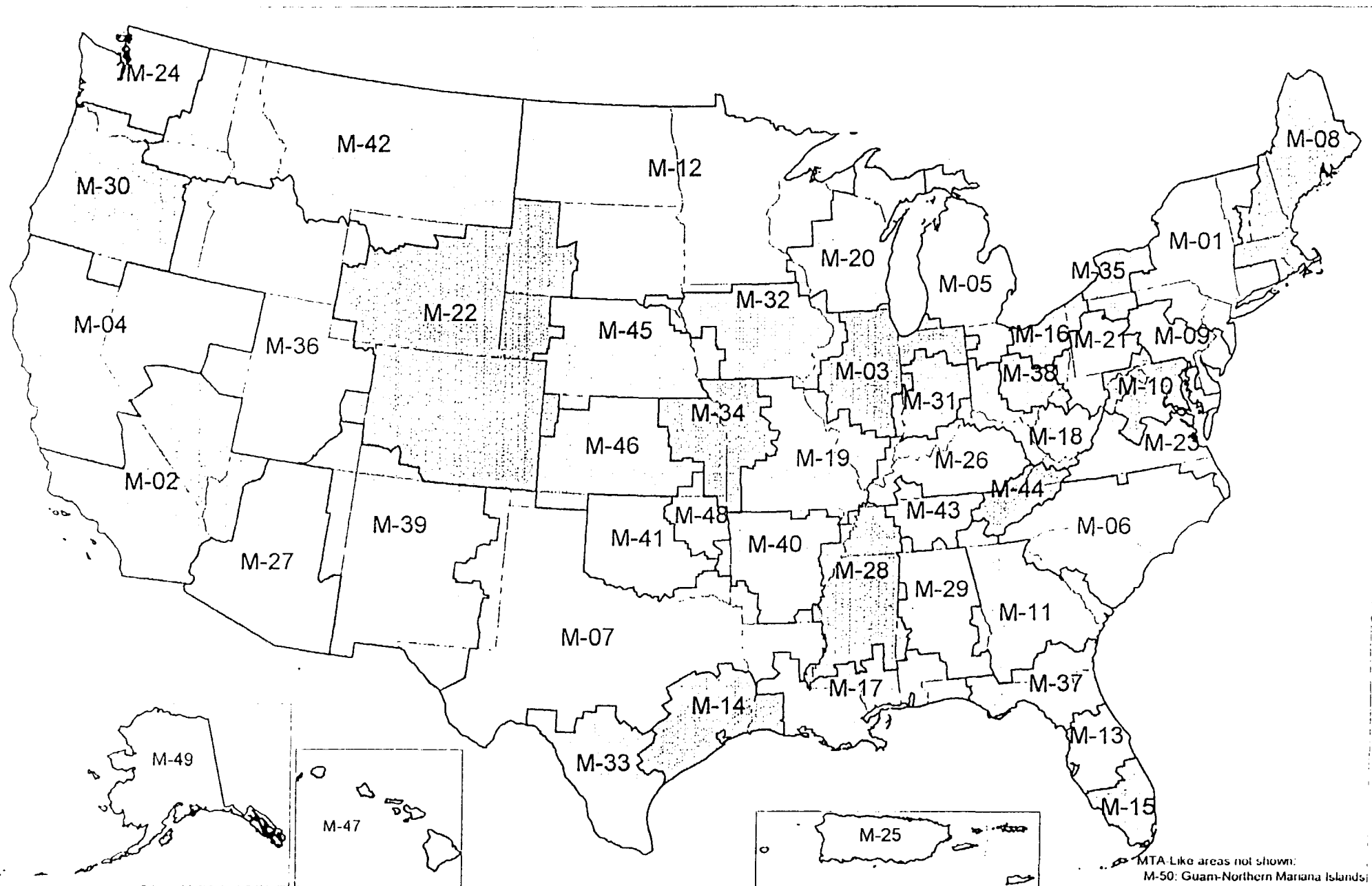
$$\begin{array}{rcl} 2 \times 51 \text{ MTAs} & = & 102 \\ 4 \times 493 \text{ BTAs} & = & \underline{1,972} \\ & & 2,074 \end{array}$$

Because the FCC has granted pioneer's preferences to three broadband PCS applicants, only 2071 licenses will be awarded through the competitive bidding process (these preferences were granted for Los Angeles, New York, and Washington D.C. MTAs).

BROADBAND PCS ALLOCATIONS

| Frequency Block | Amount of Spectrum | Service Area | Frequency Range |
|-----------------|--------------------|--------------|-------------------------|
| A | 30 MHz | MTA | 1850-1865/1930-1945 MHz |
| B | 30 MHz | MTA | 1870-1885/1950-1965 MHz |
| C | 30 MHz | BTA | 1895-1910/1975-1990 MHz |
| D | 10 MHz | BTA | 1865-1870/1945-1950 MHz |
| E | 10 MHz | BTA | 1885-1890/1965-1970 MHz |
| F | 10 MHz | BTA | 1890-1895/1970-1975 MHz |

Broadband Personal Communications Services FCC Licenses by Major Trading Areas

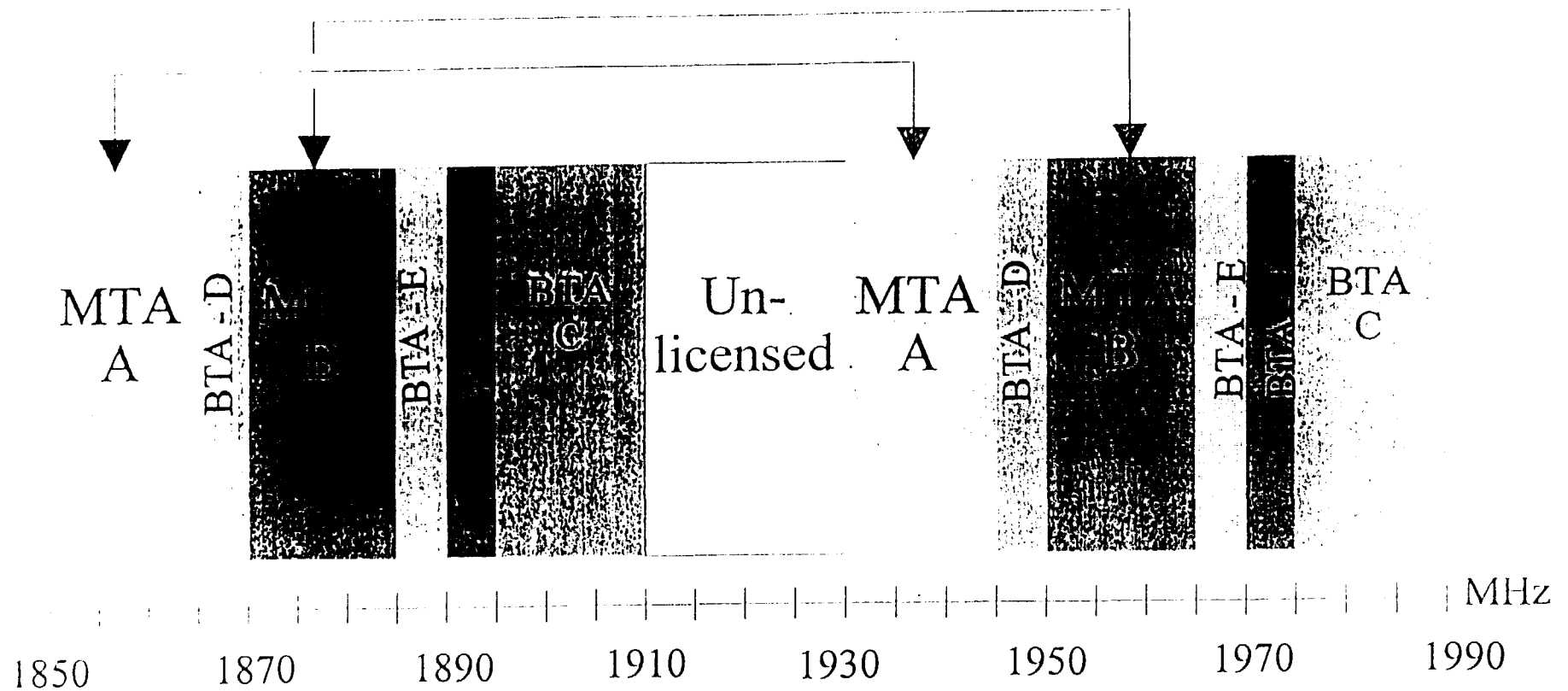


MTA Like areas not shown:
M-50: Guam-Northern Mariana Islands
M-51: American Samoa

MRD

Broadband PCS Spectrum

Note: MTA blocks "A" and "B" will be auctioned; bids will be for paired blocks and will be used to provide two-way mobile service.



MTA: Major Trading Areas / BTA: Basic Trading Areas